

Work Order ID 153451

Monday, November 21, 2016 9:27:57 AM

153451

Page 1

Item ID: D350-636-012 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.
 Start Date: 11/21/2016 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 12/5/2016 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: **DAS 21 9-89** Date: **NOV 21 2016** Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2750-042	G								DAS 21 9-89 JAN 04 2017
D3492	E								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	record fwd angle: 89.8°								
	Photocopy blue file and type labels per PPP D350-636-012 CHG 007								

DAS 27 9-89 16-11-22
DAS 79 9-89
 JAN 04 2017

B153451RH

DQA:

Date: 2017-02-28



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date:

Work Order update only ☐

Work Order: <u>153451</u> Part No. <u>D350-636012</u> NCR No.	DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☒</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☒	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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Date: <u>16/11/23</u>	Step #: <u>110</u>	QTY Effective: <u>1</u>	MRB (QSI042) Approval <u>INSP 12</u> <u>16/11/23</u>																																																																	
Description Work Order Deviation Forward step holes too close to top edge. Part may have shifted in jig		Disposition Acceptable. to fill holes with weld and re-drill. Step holes do not see high loads or compared to saddle holes. <u>AIR M133750</u> <u>BE</u>		Completed By <u>BE</u> <u>16-11-24</u> Lead hand / Supervisor Approval Verification <u>DAS</u> <u>11-24</u> <u>03</u> <u>9-89</u>																																																																
Root Cause <table style="width:100%;"> <tr> <td>Environment ☐</td> <td>No Re-verification ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> </tr> <tr> <td>Equip/Tooling ☒</td> <td>Supplier ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </table>		Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☒	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☐	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	FAULT CATEGORY <table style="width:100%;"> <tr> <td>Pressure/Forced ☐</td> <td>Temperature/Cure ☐</td> <td>Power Loss/Surge ☐</td> <td>☒ Positioned Wrong</td> </tr> <tr> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>☐ Outside Dimensions</td> </tr> <tr> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>☐ Over/Under tolerance</td> </tr> <tr> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>☐ Part Incorrect</td> </tr> <tr> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>☐ Part Lost/Missing</td> </tr> <tr> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>☐ Part Moved</td> </tr> <tr> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>☐ Drawing</td> </tr> <tr> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>☐ Finish</td> </tr> <tr> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>☐ Misread</td> </tr> <tr> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>☐ Turning Sequence</td> </tr> </table>			Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	☒ Positioned Wrong	Bending ☐	Set-up ☐	Folio/Program ☐	☐ Outside Dimensions	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	☐ Over/Under tolerance	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	☐ Part Incorrect	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	☐ Part Lost/Missing	Cuffs ☐	Contamination ☐	Out of Sequence ☐	☐ Part Moved	Crushing ☐	Countersink ☐	Off-set ☐	☐ Drawing	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	☐ Finish	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	☐ Misread	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	☐ Turning Sequence
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153451

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Item ID: D350-636-012

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 12/5/2016 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Skidtubes	0.00							
110									
Skidtubes	Memo	0.17							
Skidtubes	1- Pick D2600-3 Bent ✓								
	2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750								
	3- Drill pilot holes for blade fitting bolt holes using DT8983. Start with 3/16", then open to 0.500" using center drill then ream holes using 0.500" reamer. PIN first side. Repeat process on second side.								
	ENSURE PROPER POSITIONING FWD BEND MUST BE FACING UP WHEN DRILLING FIRST SIDE								
	Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details). Drill using drill Jig DT8150 & DT8863A for second side only DT8863B for first side (detail K)								
	4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting. Open to 0.500" using hole saw. VERIFY AND RECORD FWD BEND ANGLE.								
	6- Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".								
	7- Open up holes of Detail J to 0.297" (total of 2 holes per side)								
	8- Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004								

16-10-22 DT / AL

16-11-22 AL

BE 16-11-24

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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A/R Aluminum Rod batch: M133750

9- Grind welds flush as per Dwg D2750

78616-1124

120

120

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

1DAS
38
9-89

NOV 30 2016

130

130

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

1DAS
38
9-89

NOV 30 2016

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Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00

140

HandFinish

Memo

0.06

Hand Finishing

1 0 16-11-30 JH

150

QC7-Inspect Chemical Conversion Coat

0.00

150

QC

Memo

0.00

Quality Control

DP 16-11-30

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Start Date: 11/21/2016 Start Qty: 1.00

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Required Date: 12/5/2016 Req'd Qty: 1.00

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

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Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

0.00

160

Skidtubes

Skidtubes

Skidtubes

Memo

0.17

1- Open up holes of Detail L using hole saw and ground handling to 0.625"
(total of 8 holes per side) as per dwg D2750.2- Open up holes of Detail K using hole saw to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float holes using uni-bit to .500" (4 per Side)

4- Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750
(welding instructions on sheet 9)

5- Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7- Bond web D2739 in place as per QSI 015, let cure for 12hrs.

A/R Sikaflex-291

batch: B136093exp. date: 17-02-16****ATTN: USE I-BEAM LOCATION AID (BLADE FITTING)****8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 9)

A/R Aluminum Rod

batch: M133750

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

16-12-1 JH

16-12-0 DT JH

786 16-12-05

16-12-07 DT JH

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Start Date: 11/21/2016 Start Qty: 1.00

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Required Date: 12/5/2016 Req'd Qty: 1.00

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11- Spot face ground handling holes section (total of 4 places per side) as per
dwg D275012- Deburr holes, ensure tube is free of all scratches before sending to
paint.

170

170

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds 0.00

Memo 0.00

180

180

QC

Quality Control

QC5- Inspect part completeness to step on W/O 0.00

Memo 0.00

VERIFY C'BOARD IS GOOD

16-12-08 DTB

DAS
38
9-88

DEC 08 2016

DAS
38
9-88

DEC 08 2016

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	Pressure Wash per QSI005 4.3	0.00							
190	HandFinish	0.07				(X1)	✓		2016/12/09
Hand Finishing	Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								BEB
200		0.00							
200	SprayPaint	0.07				1			DAS 41 9-89
Spray Painting	Memo 1- PRIME AS PER DWG AND QSI 005 4.2 PRIMER PRC DESOTO 515X349 BATCH: <u>135929</u> 2- PAINT WHITE AS PER DWG AND QSI 005 4.2 PAINT BATCH: <u>135621</u>								16-12-13
210	QC14- Inspect Spray Paint	0.00							
210	QC	0.00							DAS 15 9-89
Quality Control	Memo Inspect for foreign object per QSI 024					IR+1	✓		16/12/14

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Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
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DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230

0.00

230

HandFinish

Hand Finishing

HandFinishing

Memo

0.19

1-Install inserts as per dwg D2750

2-Inspect for Foreign Objects

3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: 11136093EXP DATE: 12/04 RT0598 M13-385 18/10/1

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: 11135473

5-Coat all exposed fasteners with "LPS Procyon"

batch: 133640IRH d jll 16/12/16

240

QC5- Inspect part completeness to step on W/O

0.00

240

QC

Quality Control

Memo

0.00

① 161220DAS
9
9-89

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Run

Start

NR1

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Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
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DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
Number
JAN 04 2017Insp.
Stamp

250

Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.01

Quality Control

270

Packaging

0.00

270

Packaging

Memo

0.00

Packaging

Package as per PPP D350-636-012
Location : FG072DAS
27
9-89

JAN 04 2017

DAS
27
9-89

JAN 04 2017

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Work Center ID****Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.02

Quality Control

DAS
21
9-89

JAN 04 2017

DAS
21
9-89

JAN 04 2017

Picklist Print

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Page 1

Work Order ID: 153451

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Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:I02.09.25Rearranged procedure stepsKJ
IPP Rev:J 06-03-29 As per Rev D EC IPP REV:K
AS PER REV F JLM 13-08-22 VERIFIED BY:DD
IPP Rev:K 06-07-13 As per dsi9343 EC
IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By:EC
IPP Rev:M 08-04-22 update steps 4,13 DD verified by:EC
IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec IPP Rev:O
10.06.22 revise seq110 DD verf:EC IPP Rev:P 10.10.01 as
per IIN revH DD verf:EC IPP REV:Q 13.08.27 PER ECN13-
594 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2600-3-BENT-RH

Manufactured

No

110

Each

7.0000

1

1

D2600-3-BENT-RH

Extrusion Bent RH

**

16-11-22 DT

Location

Loc Qty

Loc Code

LG002

7

150499

7

D2744

Manufactured

No

110

Each

22.0000

1

1

D2744

Cap

**

16-11-22

Location

Loc Qty

Loc Code

LG001

22

145790

12

150653

10

D2739

Manufactured

No

160

Each

9.0000

1

1

D2739

350 I Beam

**

16-12-01 DT

Location

Loc Qty

Loc Code

LG002

9

153678

9

150718

9

Picklist Print

Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D2743

Manufactured No

160

Each

134.0000

8

8

D2743

Crossbolt Spacer

BE1618-05

Location

Loc Qty

Loc Code

LG001

134

147561

8

150407

126

8

D3490-3

Manufactured No

160

Each

31.0000

4

4

D3490-3

Cross Bolt Spacer

*BE1612-05
B153679 *4*

Location

Loc Qty

Loc Code

LG001

31

137807

2

140801

1

150497

28

D3490-1

Manufactured No

160

Each

45.0000

4

4

D3490-1

Cross Bolt Spacer

*BE1612-05
B153680 *4*

Location

Loc Qty

Loc Code

LG001

45

134019

4

150496

41

D3631-1

Manufactured No

230

Each

159.0000

8

8

D3631-1

Washer

11 10121.1

Location

Loc Qty

Loc Code

FP001

159

147068

7

148837

52

150675

100

B153587

x8

Picklist Print

Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D3791-1 Manufactured No 230 Each 8.0000 1 1

D3791-1

Wearpad

ll 16/12/14

Location

Loc Qty

Loc Code

FP002

8

B153497

x1

148677

8

D3793-3 Manufactured No 230 Each 17.0000 1 1

D3793-3

Wearplate Aft

ll 16/12/14

Location

Loc Qty

Loc Code

FP002

17

B153466

x1

148620

5

150138

12

MS21043-6 Purchased No 230 Each 87.0000 4 4

MS21043-6

NUT

ll 16/12/14

Location

Loc Qty

Loc Code

FG

20

M1136295

x1

103693

20

FP001

57

m135470

30

m135603

2

m136047

25

ST302

10

m134817

10

Picklist Print

Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D3794-1 Manufactured No 230 Each 20.0000 1 1

D3794-1

Gasket Fwd

**

all 10/12/16

Location

Loc Qty

Loc Code

FP001

20

B153526

v1

142770

1

147682

1

150417

6

150695

12

NAS1611-010 Purchased No

230 Each 161.0000 8 8

NAS1611-010 *y*

O-RING

**

all 10/12/16

Location

Loc Qty

Loc Code

FP001

161

M1136295

v8

m134955

7

m135603

154

D2741 Manufactured No

250 Each 60.0000 1 1

D2741

Replacement Blade

**

1 B148028

DAS 26 9-89
DAS 28 9-89

Location

Loc Qty

Loc Code

FG

10

131616

10

ST538

50

132981

15

148028

35

DAS 27 9-89

JAN 04 2017

Picklist Print

Monday, November 21, 2016 9:28:00 AM

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Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1515H3L

Purchased

No

230

Each

175.0000

4

4

***NAS1515H3I ***

Washer

all 11/12/14

Location

Loc Qty

Loc Code

FG

40

102472

40

FP001

31

m127831

20

m134508

11

ST260a

100

m135600

100

x4

ST266

4

m130726

4

NAS1611-013

Purchased

No

230

Each

227.0000

8

8

NAS1611-013

O-Ring

all 11/12/14

Location

Loc Qty

Loc Code

FP001

227

m134676

30

m135544

93

m135603

104

x8

Picklist Print

Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

177.0000

4

4

AN3C6A

**

all 16/12/14

Bolt

LocationLoc QtyLoc Code

FG

10

122416

10

M136295

xcl

FP001

72

m135704

72

OVER002

60

m135442

60

ST349

35

m128704

27

m132767

2

m133077

6

NAS1149C0832R

Purchased

No

230

Each

125.0000

1

1

NAS1149C0832R

**

all 16/12/14

Washer

LocationLoc QtyLoc Code

FP001

23

m125807

23

ST265

102

m135536

102

x1

D3536-25

Manufactured

No

230

Each

19.0000

1

1

D3536-25

**

all 16/12/14

Gasket Center

LocationLoc QtyLoc Code

FG

6

87053

2

95328

4

FP001

13

146747

2

150578

11

B153641

x1

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Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D3794-3

Manufactured No

230

Each

25.0000

1

1

D3794-3

Gasket Aft

all 11/21/16

Location

Loc Qty

Loc Code

FP001

25

147325

1

150181

13

150612

11

21

AN3C5A

Purchased

No

230

Each

1,248.000

34

34

AN3C5A

Bolt

all 11/21/16

Location

Loc Qty

Loc Code

FG

5

122800

5

FP001

130

M135603

130

OVER002

900

M135948

400

M136047

500

ST350

213

M134676

13

M135442

200

M1136245

134

Monday, November 21, 2016 9:28:00 AM

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Page 8

Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D3537-1

Manufactured No

230

Each

145.0000

3

3

D3537-1

Wearpad

del 12/12/14

Location

Loc Qty

Loc Code

FG

14

79833

4

88562

10

FP001

130

141922

7

147593

36

150462

34

150709

1

151518

52

x3

ST184

1

125911

1

D3535-25

Manufactured No

230

Each

15.0000

1

1

D3535-25

Wearplate Center

del 12/12/14

Location

Loc Qty

Loc Code

FG

4

139987

1

148669

1

95077

2

FP002

11

148669

3

150650

8

B153991

x1

Picklist Print

Monday, November 21, 2016 9:28:00 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D3492-3

Manufactured No

230

Each

154.0000

8

8

D3492-3******

Plug

LocationLoc QtyLoc Code

FP001

154

142869

3

147535

26

150361

125

B153797

x8

NAS1149C0332R

Purchased

No

230

Each

3,522.000

38

38

NAS1149C0332R******

WASHER

LocationLoc QtyLoc Code

FP001

880

m135672

568

m135948

312

GA

86

m133284

86

ST260a

1500

m135466

1000

m136042

500

ST266

1056

m135408

356

m135766

500

m135908

200

M1136199

x38

D3488-042

Manufactured

No

230

Each

12.0000

1

1

D3488-042******

Blade Fitting RH

LocationLoc QtyLoc Code

FP001

12

144738

2

148618

4

150126

6

B153728

x1

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Monday, November 21, 2016 9:28:01 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

AELS8-1032-225

Purchased

No

230

Each

5,207.000

38

38

AI S4-1032-225

Rivnut

all 10/12/16

Location

Loc Qty

Loc Code

CCK007

5000

M135998

5000

FG

20

M134975

20

FP001

187

M135603

40

M135920

147

D3492-1

Manufactured

No

230

Each

135.0000

8

8

D3492-1

Plug

all 10/12/16

Location

Loc Qty

Loc Code

FP001

135

148723

4

150701

131

D3793-1

Manufactured

No

230

Each

17.0000

1

1

D3793-1

Wearplate Fwd

all 10/12/16

Location

Loc Qty

Loc Code

FP002

17

148647

5

150194

12

B153818

VL

Picklist Print

Monday, November 21, 2016 9:28:01 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

AN8C35A Purchased No 230 Each 64.0000 1 1

AN8C35A

Bolt

**

del 16/12/14

Location Loc Qty Loc Code

FG	5	
121275	5	
FP001	29	
m133336	15	<i>xl</i>
m134130	14	
over005	30	
m134131	15	
m134133	15	

MS21083C8 Purchased No 230 Each 81.0000 1 1

MS21083C8

Nut

**

del 16/12/14

Location Loc Qty Loc Code

FP001	14	<i>11136245</i>
m135603	14	<i>xl</i>
ST297	67	
m135297	25	
m135470	2	
m136047	40	

D2745 Manufactured No 230 Each 38.0000 8 8

D2745

Bushing

**

del 16/12/14

Location Loc Qty Loc Code

FP001	38	<i>B150681</i>
129584	7	<i>xs</i>
136214	2	
145904	29	

Picklist Print

Monday, November 21, 2016 9:28:01 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

376.0000

4

4

AN6C44A

Bolt

**

all 16/12/1d

Location

Loc Qty

Loc Code

FP001

62

131649

50

m132556

12

over009

314

m132556

210

m135718

52

m135719

52

x 4

D3532-1

Manufactured

No

250

Each

35.0000

2

2

D3532-1

Spacer

**

B153825

Location

Loc Qty

Loc Code

ST041

35

144630

5

150708

30

JAN 04 2017

MS21083C8

Purchased

No

250

Each

81.0000

2

2

MS21083C8

Nut

**

Location

Loc Qty

Loc Code

FP001

14

m135603

14

ST297

67

m135297

25

m135470

2

m136047

40

2x

JAN 04 2017

Picklist Print

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Monday, November 21, 2016 9:28:01 AM

Work Order ID: 153451

153451

Parent Item: D350-636-012

D350-636-012

Parent Item Name: Skidtube RH, Std Wearplates, DART (Apical) Cylindrical/Aerazur Float Comp.

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0863J

Purchased

No

250

Each

426.0000

2

2

NAS1149D0863.J

Washer

DAS
2628
9-89
9-89

Location

Loc Qty

Loc Code

FP001

46

125484

46

ST260a

100

125635

100

ST263

280

125268

280

D3493-1

Manufactured

No

250

Each

46.0000

2

D3493-1

Washer

2x.
B/53790

DAS
2628
9-89
9-89

Location

Loc Qty

Loc Code

FG

10

97201

10

ST039

36

140678

16

150677

20

***ONLY INSTALL IF INSTALLING ON APICAL
FLOAT SYSTEM***

AN8C21A

Purchased

No

250

Each

28.0000

2

AN8C21A

Bolt

2
m136262

DAS
2628
9-89
9-89

Location

Loc Qty

Loc Code

FG

4

123966

2

m132169

2

ST332

24

m132169

2

m132522

1

m134590

21

JAN 04 2017

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QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH: ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
STANDARD: PRIME (REF. 4.2.1.3.3) AND PAINT WHITE PER DART QSI 005 4.2
OPTIONAL: POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
FINISH WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 153451 MLJ
1611-21

RELEASED
2013-08-13
ND

G	CORRECTED TOLERANCE ON $\phi 0.500$ THRU HOLE: IS $+0.010/-0.000$, WAS $+0.100/-0.000$ (ZN B3-4, B2-5); ADD VIEW TO CONTROL FWD BEND ORIENTATION (ZN D-1-4/-3-4-7); UPDATED FINISH OPTIONS; INSIDE OF TUBE NO LONGER SPRAYED WITH LPS-3; REASON: PART13-276 AND NCR13-2757	MB	13.07.11
F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL); WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 06-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741; QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-18A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN	MM		
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.07.11		

DART AEROSPACE USA, INC.

KENT, WA

DRAWING NO.

D2750

TITLE

350 SKIDTUBE ASSEMBLY

REV. G

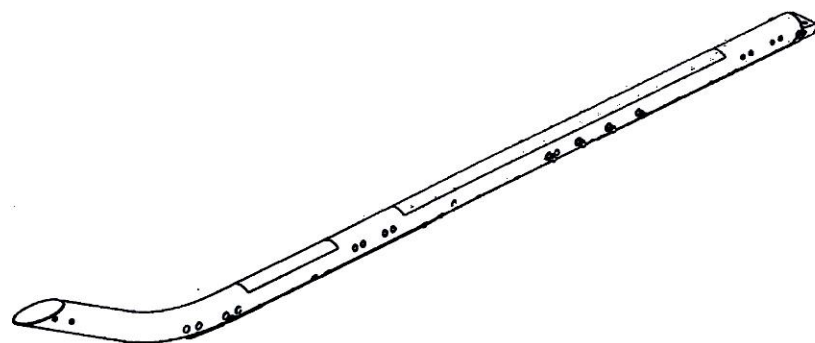
SHEET 1 OF 11

SCALE

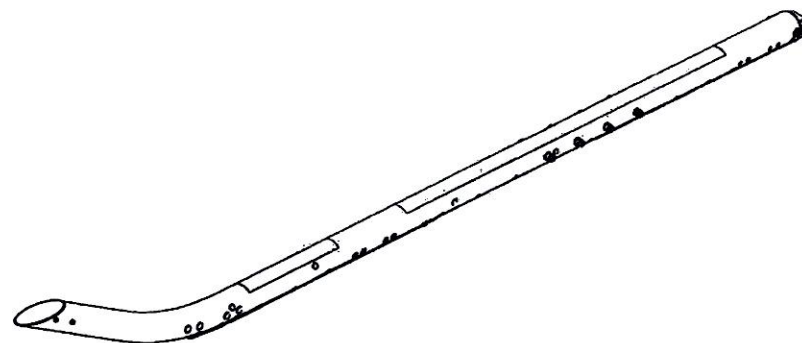
NTS

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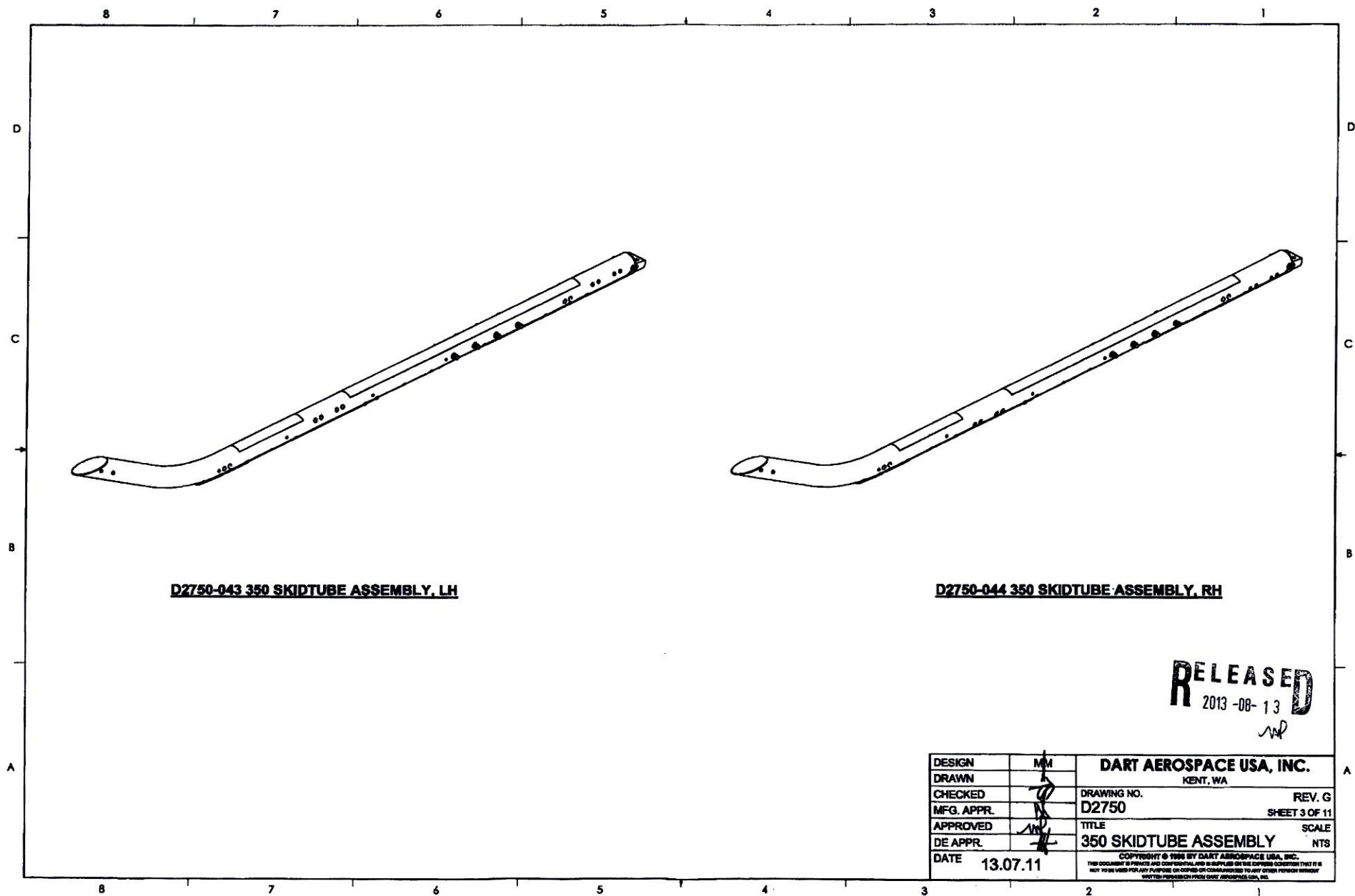
D2750-041 350 SKIDTUBE ASSEMBLY, LH



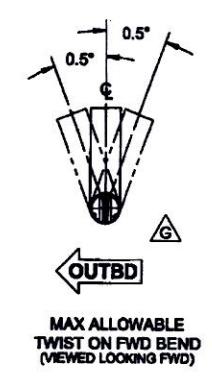
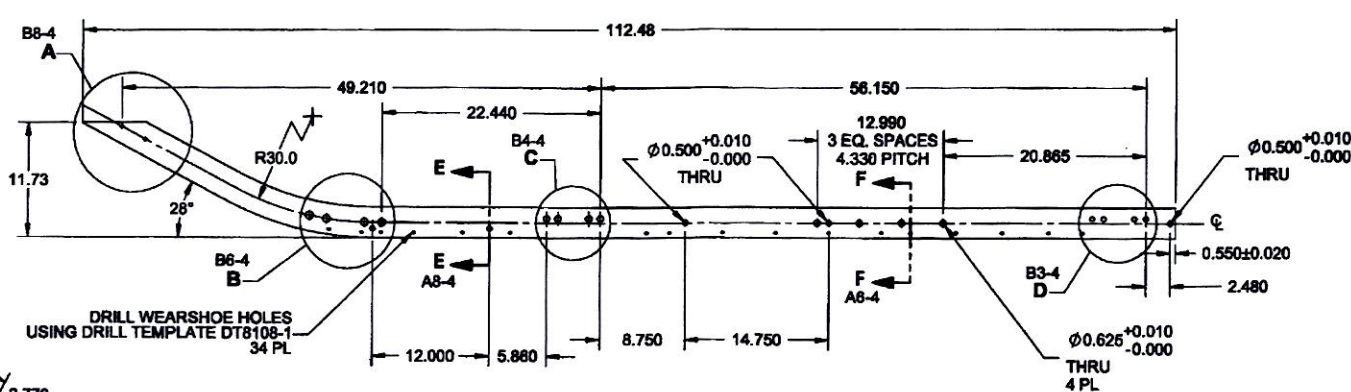
D2750-042 350 SKIDTUBE ASSEMBLY, RH

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2013-08-13
MD

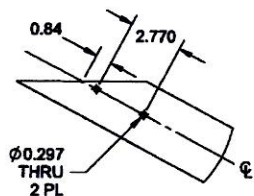
DESIGN	MM	DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO. D2750	REV. G
MFG. APPR.		TITLE	SHEET 2 OF 11
APPROVED		350 SKIDTUBE ASSEMBLY	SCALE
DE APPR.			NTS
DATE	13.07.11	COPYRIGHT © 1980 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PREPARED FOR THE U.S. AIR FORCE AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR TOPIC OR COMBINATION TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE USA, INC.	



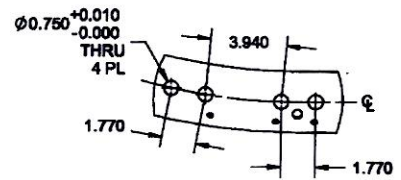
8 7 6 5 4 3 2 1



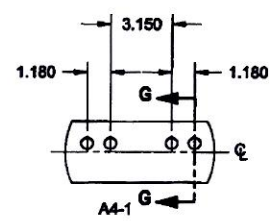
D2750-1 LH SKIDTUBE



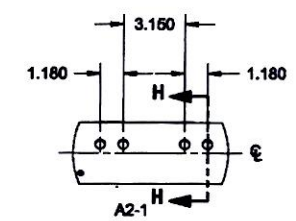
DETAIL A
SCALE 2X



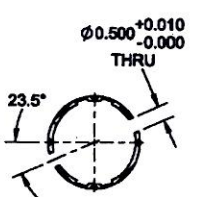
DETAIL B
SCALE 2X



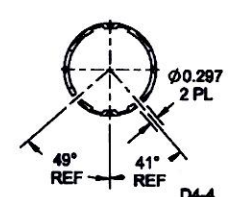
DETAIL C
SCALE 2X



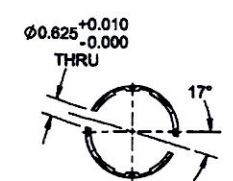
DETAIL D
SCALE 2X



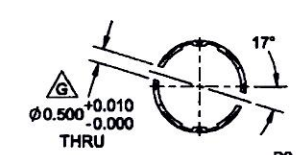
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL



SECTION G-G
SCALE 3X, 4 PL

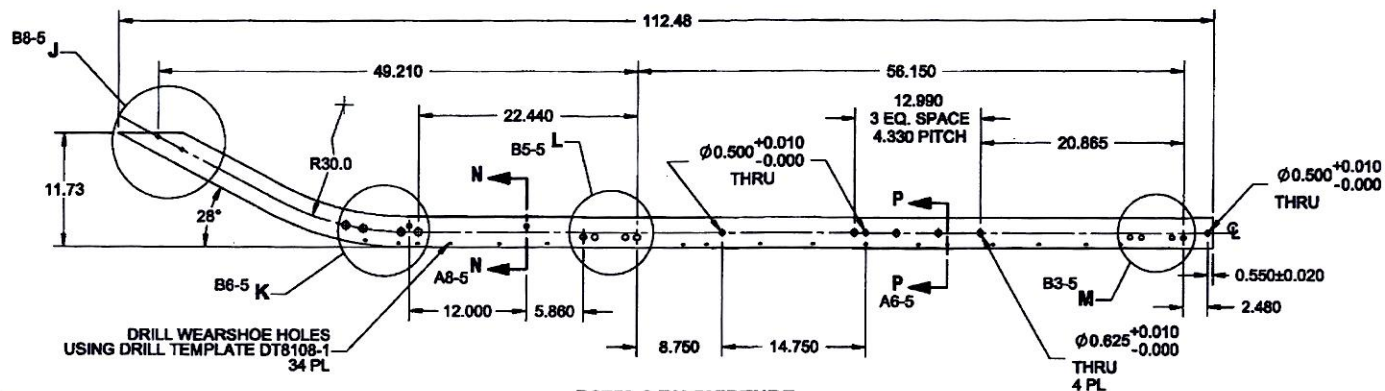


SECTION H-H
SCALE 3X, 4 PL

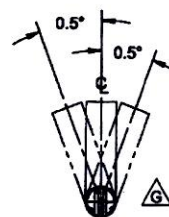
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CHECKED		DRAWING NO. D2750	REV. G
MFG. APPR.			SHEET 4 OF 11
APPROVED		TITLE 350 SKIDTUBE ASSEMBLY	SCALE
DE APPR.			NTS
DATE	13.07.11		

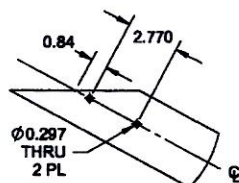
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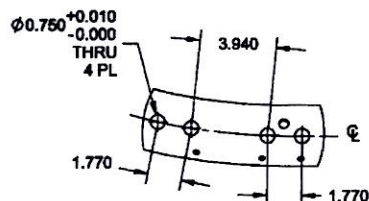
D2750-2 RH SKIDTUBE



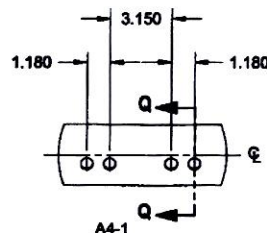
OUTBD
MAX ALLOWABLE
TWIST ON FWD BEND
(VIEWED LOOKING FWD)



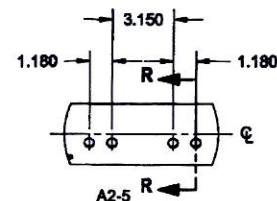
DETAIL J
SCALE 2X



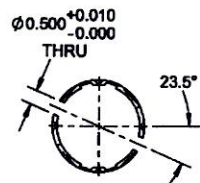
DETAIL K
SCALE 2X



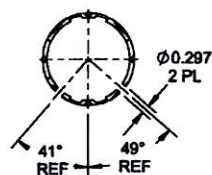
DETAIL L
SCALE 2X



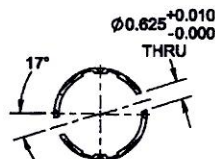
DETAIL M
SCALE 2X



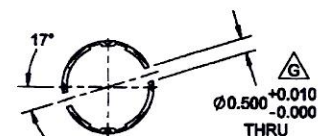
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



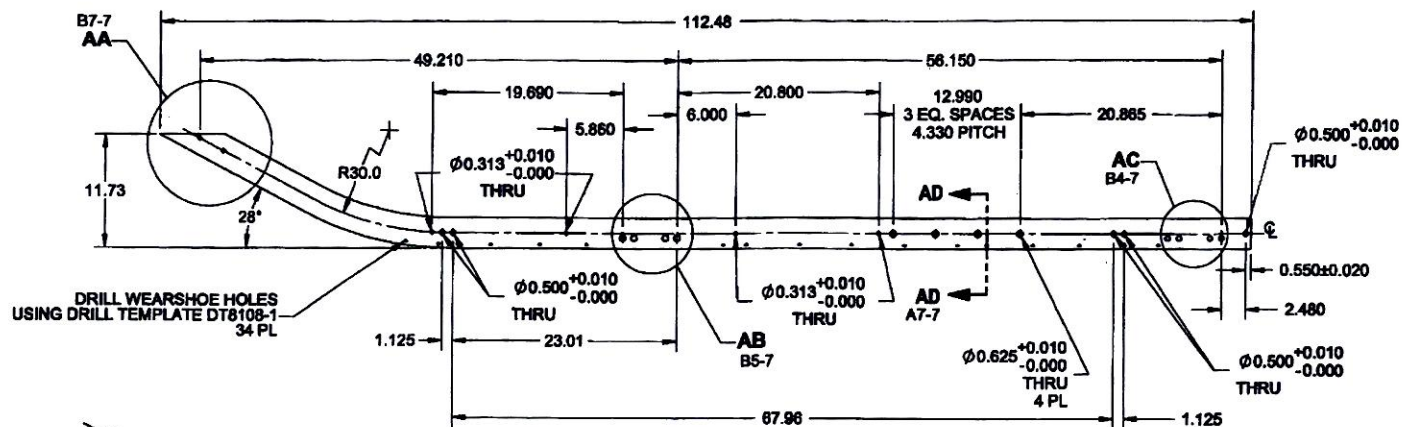
SECTION Q-Q
SCALE 3X, 4 PL



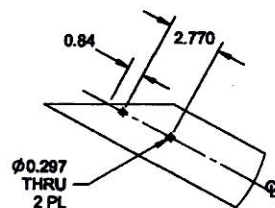
SECTION R-R
SCALE 3X, 4 PL

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APPROVED		TITLE	SCALE
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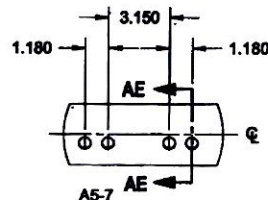
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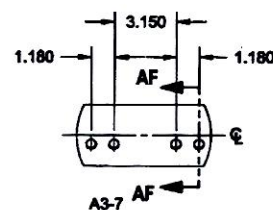
D2750-4 RH SKIDTUBE



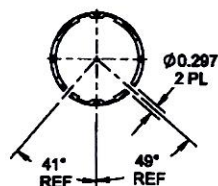
DETAIL AA
SCALE 2X



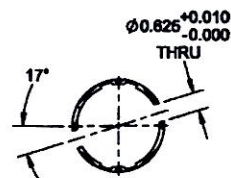
DETAIL AB
SCALE 2X



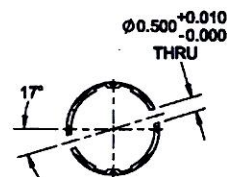
DETAIL AC
SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL

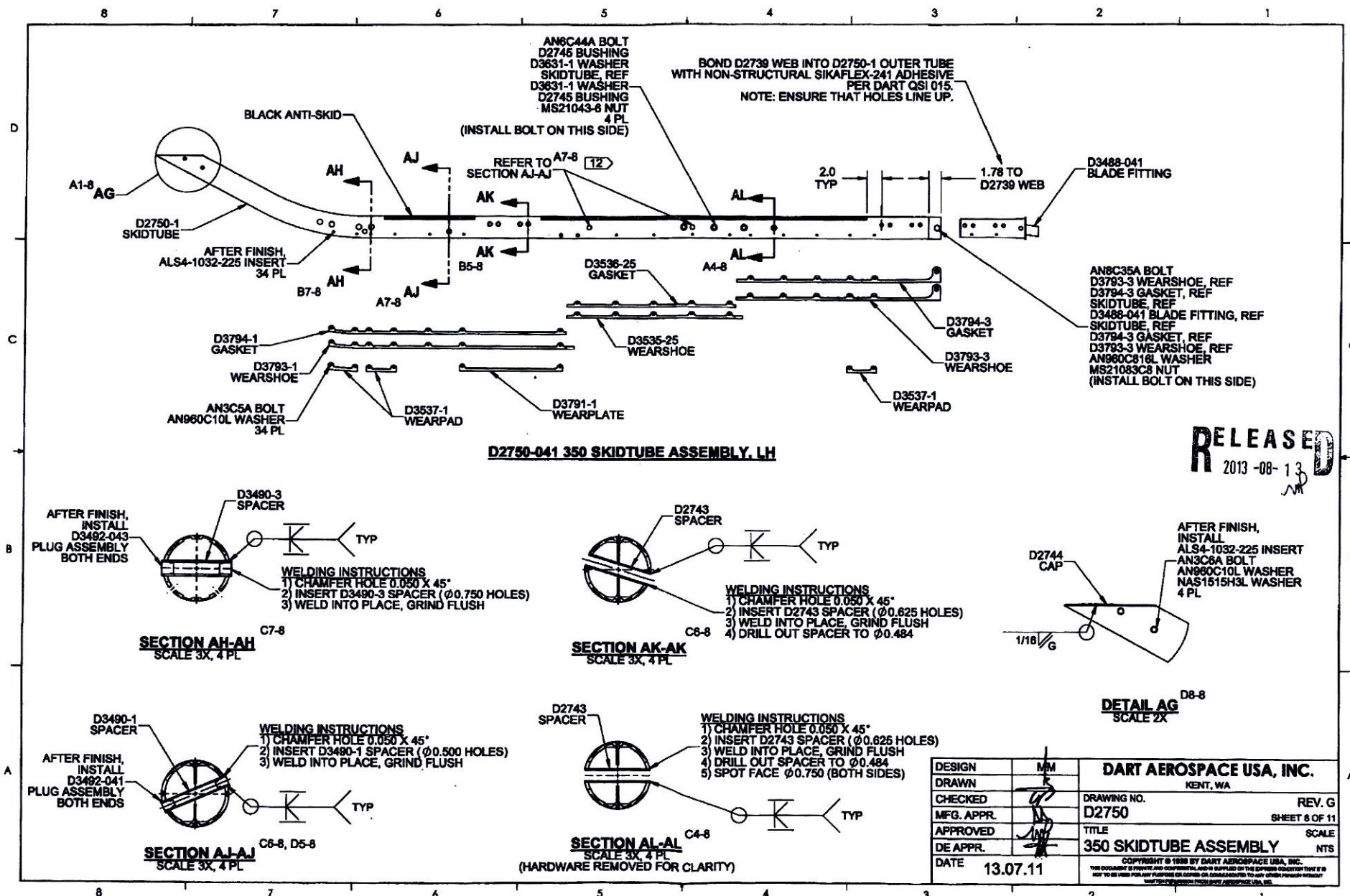


SECTION AF-AF
SCALE 3X, 4 PL

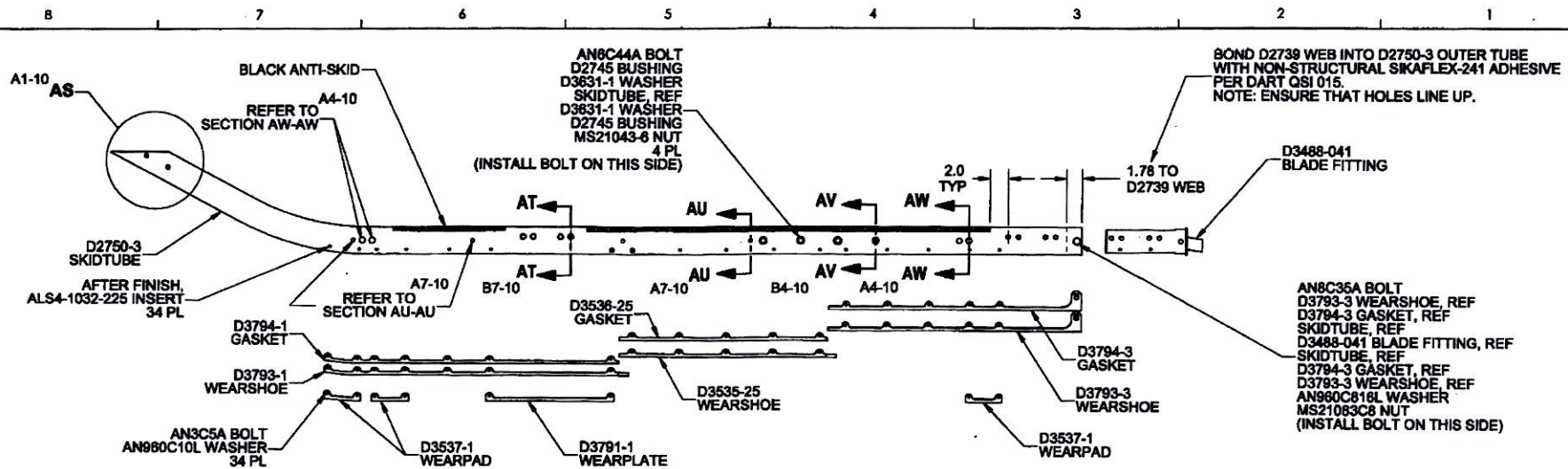
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2013-08-13

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CHECKED		DRAWING NO. D2750	REV. G
MFG. APPR.		SHEET 7 OF 11	
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	
DATE	13.07.11	NTS	

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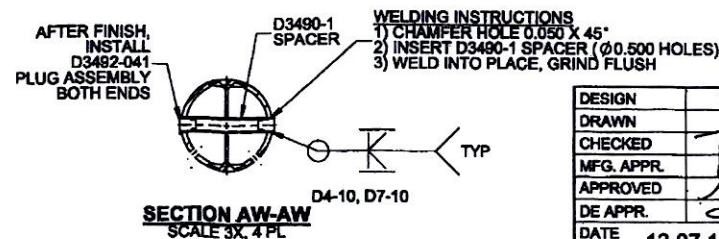
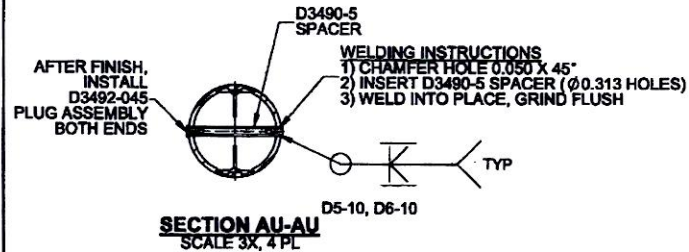
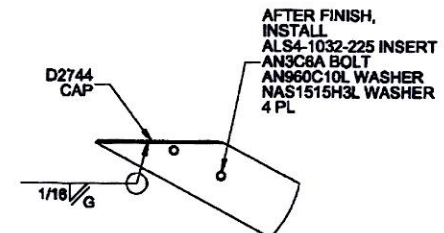
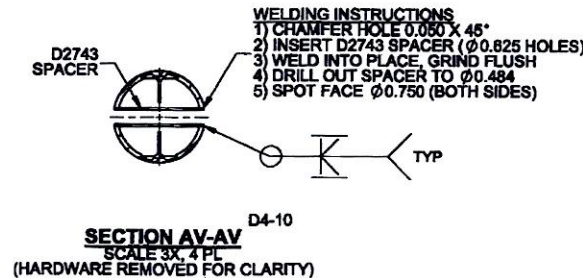
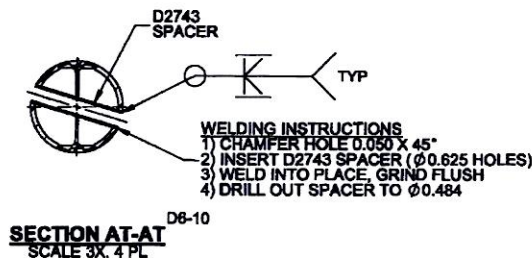


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2013-08-13



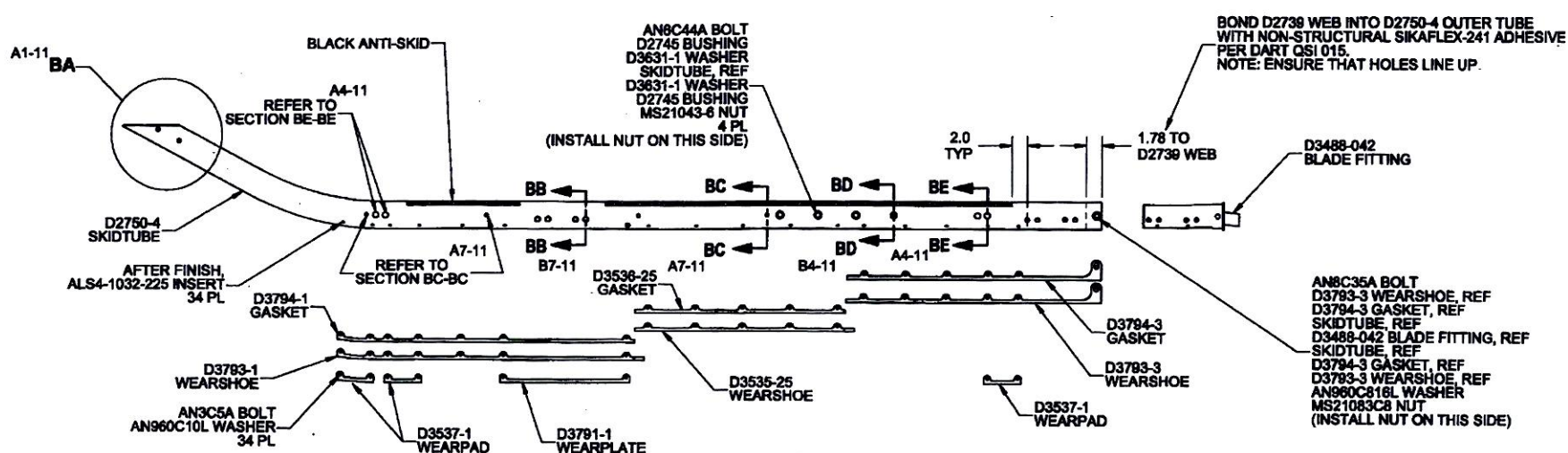
D2750-043 350 SKIDTUBE ASSEMBLY, LH

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2013-08-13



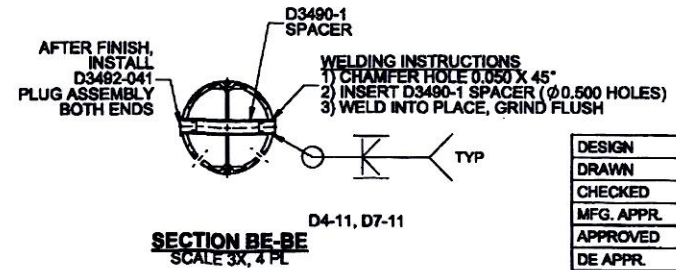
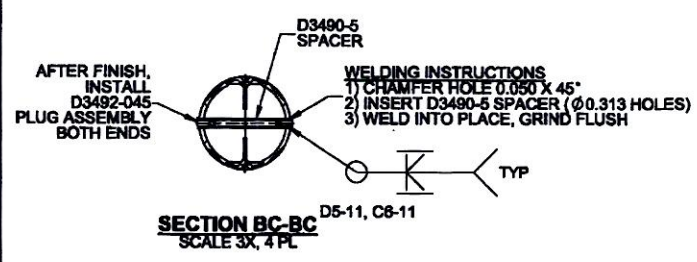
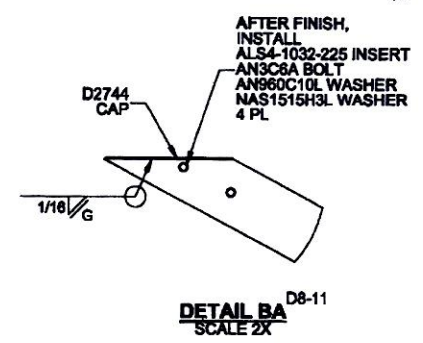
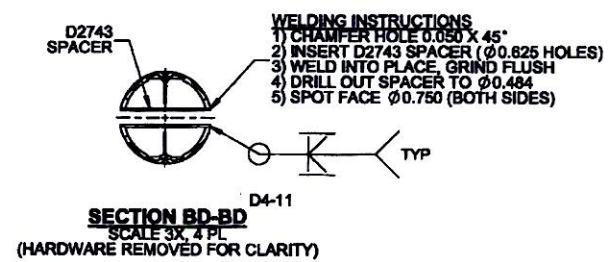
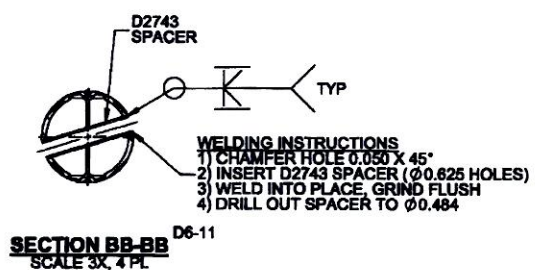
DESIGN	MM	DART AEROSPACE USA, INC.	
DRAWN		KENT, WA	
CHECKED		DRAWING NO.	REV. G
MFG. APPR.		D2750	SHEET 10 OF 11
APPROVED		TITLE	SCALE
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8 7 6 5 4 3 2 1



D2750-044 350 SKIDTUBE ASSEMBLY, RH

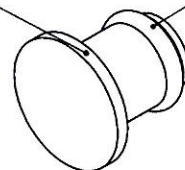
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2013-08-13



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CHECKED		DRAWING NO. D2750	REV. G
MFG. APPR.			SHEET 11 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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D3492-XX PLUG
(SEE TABLE)

NAS1611 O-RING
(SEE TABLE)



D3492-XXX PLUG PARTS LIST

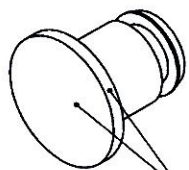
QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	QTY -053	QTY -055	PART NUMBER	DESCRIPTION
X								D3492-041	PLUG ASSEMBLY
	X							D3492-043	PLUG ASSEMBLY
		X						D3492-045	PLUG ASSEMBLY
			X					D3492-047	PLUG ASSEMBLY
				X				D3492-049	PLUG ASSEMBLY
					X			D3492-051	PLUG ASSEMBLY
						X		D3492-053	PLUG ASSEMBLY
							X	D3492-055	PLUG ASSEMBLY
1								D3492-1	PLUG
	1							D3492-3	PLUG
		1						D3492-5	PLUG
			1					D3492-7	PLUG
				1				D3492-9	PLUG
					1			D3492-11	PLUG
						1		D3492-13	PLUG
							1	D3492-15	PLUG
		1						NAS1611-005	O-RING
			1					NAS1611-007	O-RING
1								NAS1611-010	O-RING
						1		NAS1611-012	O-RING
	1							NAS1611-013	O-RING
					1		1	NAS1611-015	O-RING
				1				NAS1611-016	O-RING

NOTES:

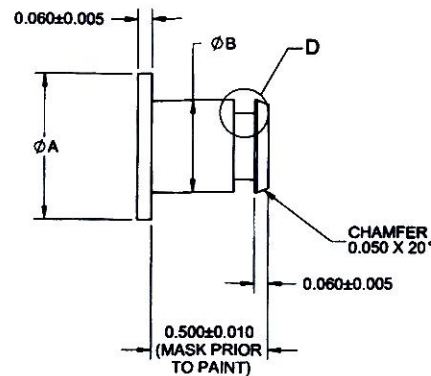
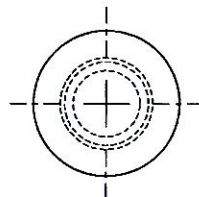
1) O-RING: POSSIBLE SUPPLIER P/N: NAS1611-XXX OR PARKER 2-XXX

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2013-11-13

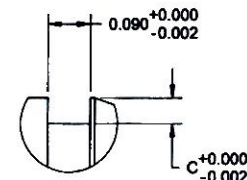
E	ADD -055 PLUG ASSY & -15 PLUG	AP	13.08.08
D	INCORPORATED DEO D3492-C-1. SHT 2 DIM C FOR -1 WAS 0.055. (SEE CAR11-048)	AJS	11.05.24
C	ADD -049/-051/-053, CHANGE DRAWING FORMAT	PH	07.10.05
B	ADD -047; UPDATE DIM A FOR -045	PH	06.05.11
A	NEW ISSUE	PH	06.01.04
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED	ALS	DRAWING NO.	REV. E
MFG. APPR.	AS	D3492	SHEET 1 OF 2
APPROVED	AS	TITLE	SCALE
DE APPR.	AS	PLUG	NTS
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POWDER COAT THESE
FACES ONLY PER NOTE 2



D3492-XX PLUG



DETAIL D

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-1	0.625	0.394	0.050	M6061T6R0.625
D3492-3	0.750	0.582	0.045	M6061T6R0.750
D3492-5	0.375	0.188	0.045	M6061T6R0.375
D3492-7	0.500	0.270	0.045	M6061T6R0.500
D3492-9	0.938	0.750	0.045	M6061T6R1.000
D3492-11	0.850	0.664	0.045	M6061T6R0.875
D3492-13	0.750	0.510	0.045	M6061T6R0.750
D3492-15	0.850	0.640	0.050	M6061T6R0.875

A

NOTES:

- 1) MATERIAL: ALUMINUM 5052-H32 OR 6061-T6 OR 1100-0 PER QQ-A-225/7 (5052) OR QQ-A-225/8 (6061) OR QQ-A-200/8 (6061) OR QQ-A-225/1 (1100) (REF. DART MATERIAL SPEC M6061T6R0.000)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE GLOSS (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

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2013-11-13

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CHECKED	ALS	DRAWING NO.	REV. E
MFG. APPR.	AS	D3492	SHEET 2 OF 2
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	PLUG	4:1
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